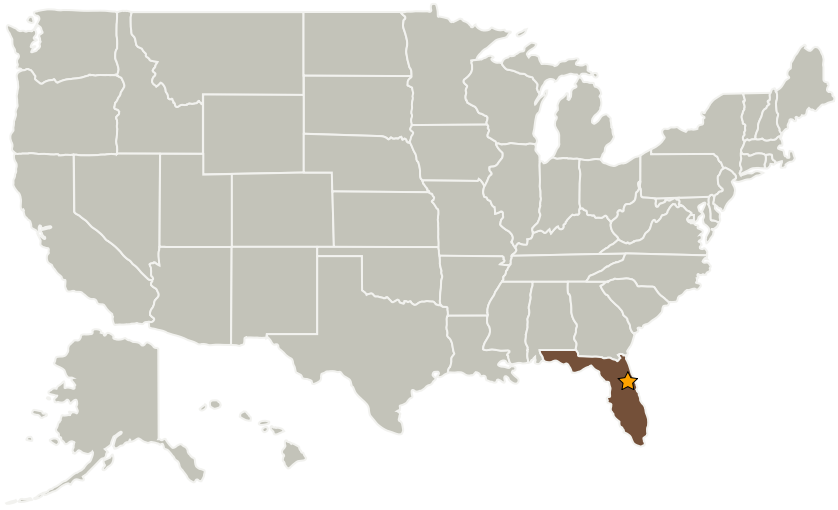
Wireless, Passive Encoded Saw Sensors and Communication Links - Phase II

Completed Technology Project (2009 - 2011)

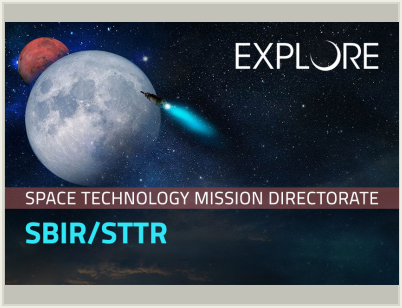
Project Introduction

The innovation proposed here is a complete, wireless remote sensing solution using passive SAW Orthogonal Frequency Coded (OFC) sensors and a wireless interrogation system. Prior to the Phase I activity, wireless, passive sensors which could operate in a multi-sensor environment had not been successfully demonstrated. This is no longer the case. An experimental transceiver test bed has been built in Phase I and wireless temperature sensing has been demonstrated. Using OFC sensors developed by the University of Central Florida (UCF), remote temperature sensing at distances of up to several feet at 250 MHz has been accomplished. Further, work on electrically small antennas (ESA) has demonstrated that antennas more commensurate with the sensor size can be achieved. A smaller sensor/antenna package yields a more flexible sensor solution. Using the results form Phase I, it is proposed that a prototype interrogator be built and operation demonstrated at 915 MHz in a multi-sensor environment.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
Mnemonics, Inc.	Supporting Organization	Industry	Melbourne, Florida



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Kennedy Space Center (KSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations
Florida

Project Transitions

July 2009: Project Start

June 2011: Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX02 Flight Computing and Avionics
  - TX02.1 Avionics Component Technologies
    - TX02.1.8 Wireless Avionics Technologies